Road Services Division
2018 Transportation Concurrency Update Report

July 2018

King County
Department of Transportation

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1. Introduction

King County's Transportation Concurrency Management (TCM) program began in 1995 and is administered by the Road Services Division (Roads). The program satisfies the requirements of the 1990 Growth Management Act (GMA), Revised Code of Washington 36.70A.070 (6) (vii) (b), and the concurrency policies contained in the King County Comprehensive Plan. King County Code 14.70.270 (A) requires performing concurrency testing in even numbered years and submittal of a report to the County Council explaining the technical assumptions and parameters used to update the concurrency map. This report addresses those requirements.

2. Summary of changes and findings

There was no change in concurrency travel shed status resulting from the 2018 Transportation Concurrency update. As in the previous 2016 update, the same single travel shed is failing, containing the Green River Valley Agricultural District. The same number of roads failed in 2016 and 2018 (eight). The mix of roads failing in 2016 and 2018 changed, but the total number failing is the same. Three new roads are failing in 2018, and three roads failing in 2016 are now passing in 2018. The impact of these changes was not enough to change overall travel shed results from the previous 2016 update.

Data gathering

The same data gathering methods were used for this update as in 2016. Comprehensive travel time data was purchased from INRIX, Inc. for arterials in the Concurrency road network for the month of March 2018.

Travel sheds

There were no changes made to travel shed boundaries for this update. Thirteen travel sheds were used, consisting of seven rural and six urban travel sheds.

3. Concurrency test results

2018 Transportation Concurrency update results did not change from the 2016 update.

Of the 13 travel sheds, all urban sheds pass, and six of seven rural sheds pass. Travel shed seven is failing due to the unique nature of this rural pocket in the urban area. Travel shed seven contains the rural-designated Green River Agricultural Production District and there is no significant development potential in this shed. This shed is surrounded by the cities of Kent, Auburn, and Des Moines.

Travel Shed	Total Travel Shed Mileage	Travel Shed Total Failed Mileage	Percent Travel Shed Failing Standards	Travel Shed Concurrency Test (85% Compliance)*
1	13. 3	1.25	9%	PASS
2	32. 8	3.8	12%	PASS
3	25. 5	0	0%	PASS
4	30. 3	1. 4	5%	PASS
5	49.6	0. 0	0%	PASS
6	0. 0	0. 0	0%	PASS
7	2. 0	0.5	25%	FAIL
A	6. 5	0.25	4%	PASS
B	3. 0	0. 0	0%	PASS
C	2. 2	0. 0	0%	PASS
D	8. 2	0. 0	0%	PASS
E	10.2	0. 0	0%	PASS
F	1. 9	0. 0	0%	PASS

*The transportation concurrency program tests arterials within a shed against their level of service standard and calculates the percentage of failing arterial segments in that travel shed. If more than 15 percent of tested miles fail, the travel shed fails the concurrency test and the shed is closed for development. The designated Rural Towns (Fall City, Snoqualmie Pass, and Vashon) and Rural Neighborhood Commercial Centers (Cottage Lake, Cumberland, Maple Valley, and Preston) all pass concurrency testing.

2018 Failing Route Segments by Travel Shed

Travel Shed	Route Segment	Arterial Classification	Distance in Miles	LOS Standard	Speed	LOS	Travel Shed Status
1	Vashon Highway (Bank Road to SW 156 St)*	Principal	1.25	B	23	C	Pass
2	Novelty Hill Road (218th Ave NE to 234th Ave NE)	Principal	0. 16	B	27	C	Pass
2	Novelty Hill Road (234th Ave NE – W Snoqualmie Valley Road)*	Principal	0.67	B	24	C	Pass
2	Novelty Hill Road (City of Redmond – 218 Ave NE)	Principal	2.00	B	27	C	Pass
2	NE Woodinville-Duvall Road (W Snoqualmie Valley Road – Snoqualmie River)	Principal	0.97	B	24	C	Pass
4	Issaquah-Hobart Road (Issaquah City limits to SE 127th St)	Principal	1. 44	B	20	D	Pass
7	S 272 St (55th Ave S – Urban Growth boundary)	Principal	0. 50	B	23	C	Fail
A	16 Ave SW (Roxbury – SW 100 St)*	Principal	0.25	E	13	F	Pass

**Newly failing the concurrency test in 2018.*

Three route segments in 2016 are no longer failing the concurrency test in 2018:

- *NE 124th St (Redmond City Limits to SR-202)*
- *236th/238th Ave NE (Union Hill Road to SR-202)*
- *83rd Ave S/Central Ave (Auburn City Limits to Kent City Limits)*

4. Actions to address failing travel sheds

In 2018 (as in 2016), only travel shed seven is failing the concurrency test. The situation is unique as the travel shed is located in an agricultural production district that will remain rural forever while being surrounded by dense urban area. There are only three arterials in this shed, which carry heavy, urban pass-through traffic. They are being tested at the rural level of service standard of B rather than at the urban level of service standard of E, since they are located in the rural unincorporated area, outside of the Urban Growth Boundary. It is difficult for these roadways that carry urban traffic to meet the rural level of service standard B. These road segments do meet the urban level of service standard E.

While this travel shed is failing the concurrency level of service test, the shed consists primarily of land dedicated to agriculture with no significant development potential. Since the prospect of widening roads in a King County Agricultural Production District is inconsistent with Comprehensive Plan policy, the recommendation to resolve this shed failure is to test the urban pass-through roads at the urban level of service standard E.

Technical Appendix

Standards used for concurrency testing – Level of Service (LOS)

The level of service (LOS) standards adopted in the King County Comprehensive Plan are used to appropriately encourage growth in the urban area and to determine if future growth can be accommodated on the existing roadways. Levels of service on roadways range from standard A for free flowing traffic to standard F for heavily congested traffic. The LOS for different arterial classifications is identified by travel speeds in the following table from the King County Code.

There is a different LOS standard for urban areas (standard E) than for rural areas (standard B). Mobility areas established in the rural areas have their own LOS standard. Rural Towns (Fall City, Vashon, and Snoqualmie Pass) have a standard of E, and selected Rural Neighborhood Commercial Centers (Cumberland, Cottage Lake, Maple Valley, and Preston) have a standard of D.

LEVEL OF SERVICE STANDARDS & TRAVEL SPEEDS		
	Principal Arterials	Minor Arterials
LEVEL OF SERVICE STANDARD	AVERAGE TRAVEL SPEED (MILES PER HOUR)	
A	>35	>30
B	>28 – 35	>24 – 30
C	>22 – 28	>18 – 24
D	>17 – 22	>14 – 18
E	>13 – 17	>10 – 14
F	<=13	<=10

From King County Code 14.70.220.B.2

Travel time methodology

Data Collection

Traffic data for March 2018, was purchased from INRIX, Inc. The data was organized into segment ID numbers, UTC Date Time increments, and average speed data. For every tested roadway segment, there were two segment ID numbers (one for each direction).

Data Processing and Analysis

Travel time standards were applied to designated principal and minor arterials in the Concurrency network. State routes, defined as either statewide-significant (e. g. I-5, I-90, portions of SR 99) or regionally significant (all other state routes), are not included in concurrency calculations. Statewide-significant routes are explicitly exempt from concurrency, while regionally significant routes have level of service standards adopted into the Puget Sound Regional Council's regional transportation plan.

The travel time analysis took the average speed of travel in each direction from 4:00 p.m. to 6:00 p.m. The analysis combined 13 days of data: Thursday, March 1, and Tuesday, Wednesday, and Thursday for the following four weeks of March 2018.

A sample of the INRIX data is shown below.

Average of Speed(miles/hour)	Column Labels										
Row Labels	12:00:00 AM	1:00:00 AM	2:00:00 AM	3:00:00 AM	4:00:00 AM	5:00:00 AM	6:00:00 AM	7:00:00 AM	8:00:00 AM	9:00:00 AM	10:00:0
122707963	33	31.69230769	31.69230769	32.46153846	34.15384615	32.92307692	32.23076923	32.15384615	31.76923077	33.69230769	33.4615
122717217	42	41	39	38	39.69230769	42.23076923	41	38.92307692	39.30769231	39.76923077	41.1538
122737243	36.61538462	38.46153846	39.07692308	40.38461538	39.07692308	37.61538462	37.30769231	38.46153846	37.46153846	38.61538462	38.1538
122756701	15	16	17	19	19	12.76923077	11.23076923	12.30769231	9.538461538	10.61538462	11.0769
122762256	15	16	17	19	19	12.76923077	11.23076923	12.23076923	9.615384615	10.53846154	11.0769
122815750	22	19.84615385	28	25	24.07692308	23.53846154	19.69230769	14.69230769	14.15384615	16.38461538	17.1538
122821268	20	21	15	14	12	10	9.615384615	11.46153846	11.38461538	11.76923077	13.2307
122828948	20.61538462	21.61538462	20.92307692	20.69230769	19.30769231	18.92307692	18.15384615	15.53846154	11.46153846	16.61538462	16.2307
122843063	38	37.84615385	38	38	38	35	30.38461538	32.38461538	32.84615385	32.92307692	33.6153
122843792	13.92307692	15	14	7	11	10.76923077	11.23076923	10.38461538	10.38461538	9.384615385	10.5384
122843967	13.92307692	15	14	7	11	10.76923077	11.23076923	10.38461538	10.38461538	9.384615385	10.5384
122856447	14	15	14	7	11	11	11.46153846	12.30769231	10.92307692	10.30769231	
122859033	23	15	12	20	34.15384615	28.69230769	22.92307692	18.46153846	18.69230769	20.92307692	19.4615
122860531	20.46153846	21.23076923	20.76923077	20.38461538	19.23076923	18.76923077	18.38461538	15.61538462	10.07692308	15.30769231	
122872368	20.46153846	21.23076923	20.76923077	20.38461538	19.23076923	18.76923077	18.38461538	15.61538462	10.07692308	15.30769231	
122880808	51	50.23076923	49.15384615	48.92307692	46	44.53846154	45.38461538	44.61538462	45.92307692	45.84615385	46.8461
122901810	14	15	14	7	11	11	11.46153846	12.46153846	11	10.30769231	12.0769
122903726	19.23076923	20.84615385	20.92307692	20.92307692	19.07692308	18.38461538	19.07692308	19.46153846	17	20.84615385	
122906853	19	17.92307692	19	20	20	18.30769231	18.23076923	15.53846154	15	16.30769231	17.0769
122923530	15.61538462	14.30769231	12.61538462	11.15384615	13.76923077	16.15384615	18.76923077	18.92307692	18	17.76923077	18.2307
122930331	7	7	8	6	10	9.923076923	6.923076923	7.538461538	7.461538462	6.384615385	6.23076
122931565	20	21	15	14	12	10	9.615384615	11.46153846	11.46153846	12.07692308	13.3846
122932901	16.15384615	15.69230769	16	13.07692308	14.30769231	13.61538462	16.61538462	17.92307692	22.61538462	18.23076923	19.2307
122938010	14.23076923	13.69230769	14.38461538	13.61538462	13.15384615	13	14.46153846	16.69230769	17.38461538	16.30769231	15.0769
122938027	21.23076923	19.61538462	20.30769231	23.76923077	21.92307692	18.53846154	17.46153846	15.53846154	15.30769231	14.53846154	14.8461
122938028	21.38461538	19.84615385	20.92307692	23.76923077	22	19.07692308	17.53846154	15.15384615	14.30769231	14	15.5384
122945889	35.84615385	32.69230769	32.23076923	32.61538462	34.46153846	33.69230769	33.30769231	35.76923077	34.38461538	35.23076923	35.9230
122965619	20.23076923	21.53846154	21.07692308	21.07692308	19.30769231	18.84615385	18.23076923	16.23076923	14	18.61538462	
122971094	11.23076923	12	11.92307692	10.46153846	10.61538462	10.15384615	8.923076923	8.461538462	7.846153846	6.923076923	7.46153
122971405	16.30769231	15.69230769	16	13.07692308	14.30769231	13.61538462	16.53846154	18	23	18.38461538	19.3846
122971406	20.46153846	21.23076923	20.76923077	20.38461538	19.23076923	18.76923077	18.38461538	15.61538462	10.07692308	15.30769231	
122971413	14	15	14	7	11	11	11.46153846	12.38461538	11	10.38461538	
122980061	25	25	25	25	25	25	25	21	21.69230769	19.30769231	23.9230
122994847	23	15	12	20	34.15384615	29	23	18.38461538	18.23076923	21	19.4615

Sheet1 Sheet2

Each number shown above is the average speed for that road segment for the entire month. The lower average speed of the two directions was used to test the road segment against its designated level of service standard. This determined the passing or failing of each route, and the combined result for arterials within each travel shed determined the concurrency test result of passing or failing.